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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/745,598	12/21/2000	Xiaoshu Qian	42390.P8730	1193

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EXAMINER

WILLIAMS, LAWRENCE B

ART UNIT PAPER NUMBER

2634

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/745,598

**Applicant(s)**

QIAN ET AL.

**Examiner**

Lawrence B Williams

**Art Unit**

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on 30 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 11 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 11 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Allowable Subject Matter*

1. The indicated allowability of claims 2, 12, and 18 are withdrawn in view of the newly discovered reference(s) to Kloker et al. (US Patent 4,475,812). Rejections based on the newly cited reference(s) follow.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mahoney (US Patent 6,360,369 B1) in view of Kloker et al. (US Patent 4,475,812).

(1) With regard to claim 1, Mahoney discloses in Figs. 2-5, a filter comprising: at least one multiplier (Fig. 4, 405, 406) to multiply samples of an input discrete-time signal by a set of filter weights to provide a resulting discrete-time signal, wherein the filter weights are the convolution of a set of Nyquist filter weights with a set of pre-equalizer filter weights (col. 8, lines 3-31); and at least one adder (416) to add samples of the resulting discrete-time signal.

Mahoney does not disclose wherein each of the at least one multiplier is a 2 bit by J bit multiplier, where J is greater than two.

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However, Kloker et al. teaches an X by Y bit multiplier circuit, where X and Y are integers for typical use in a digital filter (abstract; col. 1, lines 12-18).

One skilled in the art would have clearly recognized wherein each of the at least one multiplier is a 2 bit by J bit multiplier, where J is greater than two is a well-known technique introduced in many references. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Kloker et al. to modify the invention of Mahoney to incorporate the use of an improved multiplier circuit with improved speed (col. 2, lines 10-20).

(2) With regard to claim 11, claim 11 inherits all limitations of claim 1 above as claim 11 cites the method implemented by the filter taught in claim 1.

(3) With regard to claim 16, claim 16 inherits all limitations of claims 1 and 11. Though there is no explicit disclosure for use of the invention in a computer system, Mahoney does disclose the modem as a cable modem (abstract). The use of cable modems and modem functions are well known in today's technological advancement.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Ralph et al. discloses in US Patent 4,130,878 an Expandable 4 x 8 array multiplier.

b.) Patel et al. discloses in US Patent 5,031,135 a Device for Multi-Precision and Block Arithmetic Support in Digital Processors.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037.

The examiner can normally be reached on Monday-Friday (8:00-5:00).

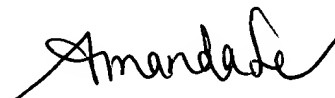
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw

November 23, 2004

  
AMANDA T. LE  
PRIMARY EXAMINER